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(54) Title: METHODS FOR IDENTIFYING A BIOSYNTHETIC PATHWAY GENE PRODUCT

(57) Abstract: The present invention provides isolated, genetically modified host cells, where a host cell is genetically modified with a nucleic acid that includes a nucleotide sequence encoding a biosynthetic pathway enzyme. Synthesis of the enzyme in the host cell results in conversion of a substrate for the enzyme into a biosynthetic pathway intermediate, which intermediate is produced in an amount effective to inhibit growth of the genetically modified host cell. The present invention further provides compositions and kits comprising a subject genetically modified host cell. Subject host cells are useful for identifying a gene product having activity in a biosynthetic pathway. The present invention further provides methods of identifying a gene product having activity in a biosynthetic pathway.